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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/561,152	12/16/2005	Yukio Nagasaki	0171-1250PUS1	9582

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BIRCH STEWART KOLASCH & BIRCH  
PO BOX 747  
FALLS CHURCH, VA 22040-0747

EXAMINER
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LISTVOYB, GREGORY

ART UNIT	PAPER NUMBER
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1765

NOTIFICATION DATE	DELIVERY MODE
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07/06/2011

ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

mailroom@bskb.com

<b>Office Action Summary</b>	<b>Application No.</b> 10/561,152	<b>Applicant(s)</b> NAGASAKI ET AL.	
	<b>Examiner</b> GREGORY LISTVOYB	<b>Art Unit</b> 1765	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 08 April 2011.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-17 is/are rejected.
- 7) ☒ Claim(s) 18-21 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                    | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)         | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                          |

**DETAILED ACTION**

***Claim Rejections - 35 USC § 103***

Claims 3-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hamciuc et al (Compared properties of fluorinated heterocyclic copolyimides, Journal of Macromolecular Sci, Part A, v37, Issue 11, October 2000, pages 1407-1435, see Abstract and Search report p. 47-48) herein Hamciuc or Hamciuc et al (New silicon containing phenylquinoxaline-imide polymers, High performance polymers (2002), 14(1), pp 63-75, see Search report p.40) herein Hamciuc-2 in view of Korshak et al (Polyamidophenylchinoxaline, Acta polymerica34(1983), pp 213-215) herein Korshak. (all cited in the previous Office Action).

The rejection can be found in the NON-FINAL action mailed 1/20/2011 and is herein incorporated by reference.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 16-17 rejected under 35 U.S.C. 103(a) as being unpatentable over over Hamciuc et al (Compared properties of fluorinated heterocyclic copolyimides, Journal of Macromolecular Sci, Part A, v37, Issue 11, October 2000, pages 1407-1435, see Abstract and Search report p. 47-48) herein Hamciuc or Hamciuc et al (New silicon

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containing phenylquinoxaline-imide polymers, High performance polymers (2002), 14(1), pp 63-75, see Search report p.40) herein Hamciuc-2 in view of Korshak et al (Polyamidophenylchinoxaline, Acta polymerica<sup>34</sup>(1983), pp 213-215) herein Korshak. (all cited in the previous Office Action).

Hamciuc teaches fluorinated heterocyclic copolyimides have been synthesized by a polycondensation reaction of a diacid chloride containing imide, hexafluoroisopropylidene and methylene groups with aromatic or heteroaromatic diamines containing preformed phenylquinoxaline or 1,3,4-oxadiazole rings (see Abstract)

Hamciuc-2 teaches a new polyimides with phenylquinoxaline rings (see Abstract and Search report p. 40).

Korshak teaches the compound of Scheme 1.

In reference to claims 16 and 17, Hamciuc or Hamciuc -2 or Korshak does not teach R1 and R2 where R1 and R2 each independently denotes a C1-20 alkyl group, C1-20 alkoxy group, or C1-20 fluoroalkyl group.

In a case law (see re Lohr (CCPA 1963) 317F2D 38, 137 USPQ 548) related to a similar substitution, replacement of two Hydrogen groups to methyl groups was decided unpatentable, since unexpected results due to the above substitution were not shown.

Therefore, it would have been obviously to a person of ordinary skills in the art to interchangeably use methyl substituted or unsubstituted polyimide and polyimide precursor unless unexpected results due to the above substitution were shown.

In reference to the new limitations to claims 3-5 and 8, Korshak discloses unsubstituted diamine (i.e. R1 and R2 are Hydrogens).

### ***Allowable Subject Matter***

Claims 18-21 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Hamciuc or Hamciuc -2 or Korshak does not teach R1 and R2 each independently denotes a tertiary butyl group.

### ***Response to Arguments***

Applicant's arguments filed 4/8/2011 have been fully considered but they are not persuasive.

Applicant submits that the film of Hamciuc-2 shows blue fluorescence with a maximum in the range of 415 to 425 nm, while Applicant's film emits white light.

However, fluorescence is a function of a polymer structure. Hamciuc-2 or Hamciuc polymers modified with Korshak represent the structure, identical to the one claimed in claim 3. As a result, their emission patterns are expected to be identical,

Note that fluorescence wavelength of Applicant's film is within the range of 315-600nm (see Table 4 of Specification), while Hamciuc-2 discloses fluorescence with a maximum in the range of 415 to 425 nm, which is within the Applicant's range.

Applicant submits that Hamciuc-2 does not constitute a teaching of a "charge carrier transporting film," and accordingly the rejection of claims 9-13 is manifestly unsustainable.

However, Hamciuc-2 or Hamciuc films modified with Korshak can be used as a charge carrier transporting films.

### ***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

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the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to GREGORY LISTVOYB whose telephone number is (571)272-6105. The examiner can normally be reached on 10am-7pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James Seidleck can be reached on (571) 272-1078. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/JAMES J. SEIDLECK/  
Supervisory Patent Examiner, Art Unit 1765  
GL

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